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ABSTRACT

In order to determine what is known about the relationships between father absence, socioeconomic status, race, and children's cognitive performance, a systematic analysis of related literature was undertaken. This study used the quantitative integrative review methodology of meta-analysis, involving transforming the findings of each study to a common metric, coding the socioeconomic status and race characteristics of the study subjects, and using conventional statistics to determine whether there were subsample effects and relationships among socioeconomic status, race, and the study findings. Decrements in intelligence, aptitude, and achievement test scores were found to be associated with father-absent children. Father-absence effects were found to be equally deleterious for low and middle socioeconomic status children. The results of the meta-analysis appear to indicate that father-absence effects are independent of socioeconomic status or race. It is difficult to establish any interaction between race and the magnitude of father-absence effects because of the lack of comparability of socioeconomic status across different racial samples. Although methodological problems encountered in the father-absence research clouds the interpretation of the findings, it appears that the variables investigated were not powerful ones that offered increased understanding of the differences among children from father-absent families. A list of 93 references is appended. (SM)

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Father Absence, Socioeconomic Status, and Race: Relations to Children's Cognitive Performance

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Father Absence, Socioeconomic Status, and Race: Relations to Children's Cognitive Performance

Numerous reviews and studies have focused on the relationship of environmental factors to cognitive performance (Kagan, 1980; Lesser, Fifer, & Marjoribanks, 1976). Variables such as socioeconomic status, race, and family configuration, specifically father absence, have received extensive attention. For example, socioeconomic status (SES) and race have been associated with performance on scholastic aptitude and academic achievement tests and school grades (Coleman, 1966; Jencks, 1972). Father-absence effects seem to be less consistent. Although O'Shields (1977) concluded that there was no relationship between father absence and scholastic aptitude, Belz & Geary (1984) found a reliable relationship between father absence and scores on the Scholastic Aptitude Test. Similar patterns for achievement test performance and school grades have been found (Shilling & Lynch, 1985; Southworth, 1984; Wasserman, 1972; Zakariya, 1982). Furthermore, unique patterns of cognitive performance appear to be associated with father absence independent of socioeconomic status and race (Averitt, 1981; Guidubaldi & Perry, 1984).

It is also apparent that families experiencing father absence generally experience reduced socioeconomic status (Hetherington, 1979; Hoffman, 1980). However, the degree to which father absence predicts cognitive performance outcomes independent of SES has not been clearly demonstrated. Because of small and socioeconomically restricted samples, studies of father absence have been unable to address the issue of whether the negative effects of father absence are attributable to decreased SES that frequently accompanies the absence of the father.

Purpose

The plethora of contradictory research findings has created the need for a systematic analysis of the literature in order to determine what is known and not known about the relationships between father absence, SES, race, and children's cognitive performance as assessed by standardized tests of intelligence, scholastic aptitude, and academic achievement and school grades. Systematic attempts to investigate the nature and covariates of father absence, SES, race, and cognitive performance are lacking.

The present study builds on a prior meta-analysis of the father-absence literature (Salzman, 1987) investigating the overall effects of father absence and the relations of study characteristics to study findings. The results of the meta-analysis raised questions regarding the potential interactive effects of SES, race, and father absence on children's cognitive performance and indicated the need for further analysis. Thus, the purpose of the present study had five parts: (1) to identify and collect all studies investigating the effects of father absence on children's cognitive performance; (2) to determine the magnitude of father-absence effects in each study; (3) to relate the size of effect to the race of the study subjects; (4) to relate the size of effect to the socioeconomic status of the study subjects; and (5) to determine how and to what extent SES and race are interacting variables associated with father-absence effects.

Method

The study used the quantitative integrative review methodology of meta-analysis (Glass, 1976; Hedges & Olkin, 1983; Rosenthal, 1984). The meta-analytic approach involved transforming the findings of each study

to a common metric (i.e., effect size), coding the socioeconomic status and race characteristics of the study subjects, and then using conventional statistics to determine whether there were subsample effects and relations among socioeconomic status, race, and the study findings.

Sample of Studies

In order to draw conclusions about the entire realm of research investigating the effects of father absence on children's cognitive performance, an attempt was made to access all relevant studies reported in the published and unpublished literature between 1925 and 1987. Toward this end, father-absence studies were sought in four places: computer document retrieval and abstracting resources, printed abstracts and indexes, previous reviews of the father-absence literature, and the bibliographies of studies once found. Because sample bias may occur if only published studies are examined (Rosenthal, 1984), an effort was made to locate a number of unpublished studies by accessing conference proceedings and by soliciting responses from investigators active in father-absence research.

For final inclusion in the meta-analysis, each study had to meet the following criteria:

1. The study focused directed on father absence or included such a focus as part of a broader inquiry. Studies of "parent absence," "one-parent families," and "broken homes" were included since the missing parent was usually the father.

2. The study investigated the effects of father absence on cognitive performance as assessed by scores on intelligence, scholastic aptitude, or academic achievement tests or school grades.

3. The study employed group comparisons or correlations for both father-absent and father-present samples.

4. The study reported descriptive statistics or used statistical analyses which yielded data that could be converted to effect sizes or effect size estimates.

5. The study included descriptions of the race and/or socioeconomic status of the study sample.

Data collection yielded 137 studies investigating the effects of father absence on children's cognitive performance. Of these studies, 82 reported socioeconomic status and/or race for the study subjects and were subsequently included in the meta-analysis. The final sample of 82 separate research investigations included in the meta-analysis comprised approximately 60% of the entire set of studies investigating the effects of father absence on children's cognitive performance. This sample represents 7,233,082 father-absent and father-present subjects from preschool to college age and from a variety of racial and socioeconomic status groups in Australia, Canada, England, and the United States.

Computation and Analysis of Effect Sizes

Glass (1976, 1981) suggests that when most of the studies of a meta-analysis are investigations with a control group, as in the father-absence research, the standard measure of findings should be a standard score difference expressed as an effect size. Therefore in the present meta-analysis, when descriptive statistics were available, effect sizes were computed by dividing the mean difference of the experimental (father-absent) and control (father-present) groups by the standard deviation of the control group. When means and standard

deviations were not reported, effect sizes were recovered from parametic test statistics and correlations via conversion formulas outlined by Glass, McGaw, and Smith (1981) and Rosenthal (1984).

The 82 studies included in the meta-analysis yielded 140 effect sizes with some studies yielding effects for more than one type of outcome for different types of father absence and different study subjects. The number of effect sizes per study ranged from 1 to 6: 45 studies yielded one effect size, 21 studies yielded 2 effect sizes, 9 studies yielded 3 effect sizes, 5 studies yielded 4 effect sizes, and one study yielded 6 effect sizes. The studies included in the meta-analysis are listed and indicated by asterisks in the References.

Results

Data from All Studies

Findings from the 82 studies were combined to determine the overall average effect size by first averaging within study effect sizes so that each study contributed equally to the general findings and then averaging effect sizes across all studies. Analysis of the study findings at this highest level of aggregation yielded an overall average effect size of -.26 of a standard deviation reflecting a .26 standard deviation superiority of the father-present group over the father-absent group. Thus, the average father-present subject had higher intelligence test scores, scholastic aptitude test scores, achievement test scores, or school grades than approximately 59% of the father-absent subjects.

Subsample Effects

Eighty-four of the 140 effect sizes were derived from studies reporting sample socioeconomic status. The 84 effect sizes were classified into three categories descriptive of the socioeconomic status of study subjects (i.e., low,

middle, and high). Effect sizes for the three socioeconomic status categories are presented in Table 1. A total of 44 effect sizes averaged -.25 of a standard deviation for low SES subjects reflecting a .25 standard deviation superiority of the father-present group over the father-absent group. The mean effect size for the middle SES category was somewhat larger, -.29 of a standard deviation. No studies included subjects from the high SES category. Subsequent analysis of variance revealed that the middle and low SES category effect sizes were not significantly different.

A total of 104 effect sizes were derived from studies reporting sample race. The 104 effect sizes were classified into three categories descriptive of the race of study subjects (i.e., white, black, and other). Effect sizes for the three race categories are presented in Table 2. Forty-eight effect size measures of father absence for white study subjects averaged -.22 of a standard deviation reflecting a .22 standard deviation superiority of the father-present group over the father-absent group. The mean effect size for the black racial category averaged across 54 effect sizes was comparable, -.24 of a standard deviation. One study yielded three effect sizes for the "other" racial category that averaged -.26 of a standard deviation. Subsequent analysis of variance revealed that the race category effect sizes were not significantly different.

Interaction Effects

Following the calculation and comparison of average effect sizes across variable categories, analyses of variance and multiple classification analyses were performed in order to determine how and to what extent SES and race were interacting variables associated with father-absence effects. Forty-eight of the 140 effect sizes were derived from studies reporting both socioeconomic

Table 1

Father-Absence Effects Compared by Socioeconomic Status

Socioeconomic status	Number of effect sizes	Mean effect size
High	0	---
Middle	40	-.29
Low	44	-.25

ANOVA Table

Source of variation	df	MS	*F*	*p*
Between	2	.196	1.416	.238
Within	81	.138		

Table 2

Father-Absence Effects Compared by Race

Race	Number of effect sizes	Mean effect size
Black	54	-.24
White	48	-.22
Other	3	-.26

ANOVA Table

Source of variation	df	MS	*F*	*p*
Between	2	.020	.141	.967
Within	81	.140		

status and race of study subjects. The 48 effect size measures were classified into categories descriptive of SES and race (i.e., low SES black, low SES white, middle SES black, middle SES white). Effect sizes for the SES/race categories are presented in Table 3.

A total of 29 effect sizes averaged -.29 of a standard deviation for father absence in the low SES black category indicating a .29 standard deviation superiority of the father-present group over the father-absent group. The mean effect size for the low SES white category was comparable, -.31 of a standard deviation. Fourteen studies averaged -.23 of a standard deviation for the middle SES white category. None of the studies reported the inclusion of middle SES black subjects or high SES subjects in either racial category. In addition, none of the studies with samples from the "other" racial category reported socioeconomic status data for study subjects.

Analyses of variance and multiple classification analyses revealed no significant interactions between categories of socioeconomic status and race and father-absence effects. Failure to find interaction effects may be due, in part, to the lack of information contained in the father-absence studies. Only 32 of the 82 analyzed studies reported socioeconomic status and race for study subjects. Furthermore, no studies included samples classified as high socioeconomic status or black middle socioeconomic status. Thus, the majority of studies contained inadequate information on which to base conclusions regarding possible interaction effects between father absence, socioeconomic status, and race.

Table 3

Father-Absence Effects Compared by Socioeconomic Status and Race

Socioeconomic status and race	Number of effect sizes	Mean effect size
Low/black	29	-.29
Middle/black	0	-----
High/black	0	-----
Low/white	5	-.31
Middle/white	14	-.23
High/white	0	-----

ANOVA Table

Source of variation	df	MS	*F*	*p*
SES	2	.164	1.18	.362
Race	1	.230	1.66	.170
SES X Race	2	.084	.60	.810
Within	42	.139		

Discussion

In the present meta-analysis, decrements in intelligence, aptitude, and achievement test scores were found to be associated with father-absent children. These decrements ranged in size to approximately one-quarter of a standard deviation for both white and black study samples. Father-absence effects were also found to be equally deleterious for low and middle socioeconomic status children. Thus, the results of the meta-analysis appear to indicate father-absence effects independent of socioeconomic status or race. Unfortunately, methodological problems including inadequate reporting, gross approximations of race and socioeconomic status categories, and failure to insure comparable father-absent and father-present samples preclude the formation of firm conclusions regarding socioeconomic status, race, and father-absence interaction effects.

Socioeoconomic Status

Socioeconomic status is an important methodological consideration in father-absence research because it summarizes a large number of concomitant variables related to father absence and cognitive performance. Researchers in the area of father absence have stressed the importance of controlling for SES in evaluating the effects of father absence; and many view it as a necessary condition for adequate research. However, the issue of whether to control for socioeconomic status is not as straightforward as some have assumed and presupposes certain assumptions which have not been explicitly delineated. Specifically, control for SES is appropriate when lower SES families have a higher likelihood of father absence. If SES is not controlled in this instance, the disproportionately large number of lower SES children in the father-absent group produces the appearance of detrimental effects when this difference is

artifactually created by differential selection on a variable (SES) highly correlated with the dependent variable (cognitive performance).

However, if the absence of the father adversely affects the SES index of the family (e.g., by lowering the income and increasing financial hardship), and these changes, in turn, have a detrimental effect on the cognitive performance of the child, then controlling for socioeconomic status will have the effect of removing variance atrributable to father absence but pathed through SES. Because of these unclear relationships between SES and father absence, an exact interpretation of the findings of the present meta-analysis is not possible. When the small effects found for father absence in this study are considered, the subtleties of control for SES seem of little practical importance but may take on considerable theoretical significance that might guide future research.

Race

It is difficult to establish any interaction between race and the magnitude of father-absence effects because of the lack of comparability of socioeconomic status across different racial samples. Of the 32 studies reporting both socioeconomic status and race for study subjects, none included black children of middle or high socioeconomic status. The white study samples, on the other hand, included children of both low and middle socioeconomic status.

Inadequate reporting and socioeconomically restricted samples also preclude the formation of conclusions regarding interactions between socioeconomic status, race, and father absence. Only three of the six possible socioeconomic status by race interactions were represented in the father-absence studies reporting demographic data--low/black, low/white, and middle/white. Thus, the present

meta-analysis indicates that investigations of the effects of father absence have been fragmentary and their results often conflicting and inconclusive.

Conclusions

Although methodological problems encountered in the father-absence research cloud the interpretation of their findings, it nonetheless appears that the variables investigated were not powerful ones that offered increased understanding of the differences among children from father-absent families. The failure to find significant interactive effects for socioeconomic status, race, and father absence may reflect the crude indexing of familial processes that may be important to cognitive performance. For example, while failure to find significant effects for socioeconomic status may offer evidence against interacting effects between socioeconomic status and father absence, it may reflect heterogeneity among father-absent families on such dimensions as the characteristics of mothers, the frequency or quality of parent/child interactions, the availability of father substitutes, and so on.

Studies that would attempt to identify and study familial processes which may influence cognitive performance of children, and differentiate father absence/presence, would be exemplary of a positive paradigmatic shift. In line with this model, additional rewarding questions concerning father absence would explore both negative and positive elements. Such inquiries would attempt to discover what elements interact to produce what effects in both father-absent and father-present homes.

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